EDITORIAL

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Progress in neuroscience in Africa: editorial

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Content of editorial:

This special issue highlights current research in basic and clinical Neuroscience on the continent of Africa. Invitations to submit were distributed via established Neuroscience networks, namely the Southern African Neuroscience Society (SANS) and the Society of Neuroscientists of Africa (SONA), and attracted research papers from across our continent. A previous special issue addressed the sustainability of Neuroscience in Africa (Karikari et al. 2016) and evaluated the development of neuroscience research in Ghana (Quanash and Karikari 2016). In this issue, the past, present and future of Nigerian Neuroscience is investigated (Balogun et al. 2018).

This special issue includes a diverse range of translational animal model studies covering an array of Neuroscience topics. Animal models of neurodegeneration were used to analyse curcumin's role in improving the function of antioxidant enzymes as well as its impact on acetylcholinesterase genes in *Drosophila melanogaster* (Akinyemi et al. 2018); the changes in antioxidant profile after chronic vanadium administration in mice (Folarin et al. 2018), and the role of MEPTIDES in reversing the deleterious effects of amyloid-β in rats (Sibiya et al. 2018). Models of drug abuse were used to investigate hippocampal neurogenesis in mice with prenatal alcohol exposure (Olateju et al. 2018), and the epigenetic changes in the hippocampus and prefrontal cortex of female mice able to freely administer cocaine (Ajonijebu et al. 2018). To model human psychopathology, researchers used a combination of corticosterone treatment and chronic restraint stress to investigate depression-induced cognitive deficits in mice (Ngoupaye et al. 2018), and studied chronic light exposure-induced alterations to serotonergic and orexinergic systems, indicating the capacity of chronic light exposure to reverse the deleterious effects of maternal separation on orexin receptors in the prefrontal cortex (Dimatelis et al. 2018). Continuing with the theme of mental illness, an animal model of obsessive-compulsive disorders, the deer mouse, was reviewed (Wolmarans et al. 2018). This issue also includes two investigations of medicinal plants. The first reports that a *Moringa oleifera* supplemented diet modulated nootropic-related biomolecules in streptozotocin-induced diabetic rats treated with acarbose and may reduce cognitive decline related to chronic hyperglycemia (Oboh et al. 2018). In the second article, *Garcinia mangostana Linn* was found to display antidepressant-like and pro-cognitive effects in an animal model of depression, the Flinders Sensitive Line rat (Oberholzer et al. 2018).

The applied clinical Neuroscience studies published in this issue are similarly diverse, addressing endocrine, developmental, communicable and non-communicable disease, as well as use of the illicit drug, methamphetamine. Studies addressing endocrine systems include investigation of the expression of thyroid-stimulating hormone receptors and thyroglobulin in limbic regions in the adult human brain (Naicker and Naidoo. 2018), and the neuroanatomical and molecular correlates of cognitive and behavioural outcomes in hypogonadal males (Akinola and Gabriel. 2018). Developmental studies address the effects of prenatal methamphetamine exposure and its association with corticostriatal white maters changes in neonates (Warton et al. 2018); altered brain morphometry in 7-year old HIV-infected children on early antiretroviral therapy (Nwosu et al. 2018), and favourable outcomes in a child with symptomatic diagnosis of Glutaric aciduria type 1 despite vertical HIV infection and minor head trauma (Thomas et al. 2018). Studies using adult participants examined the fractional anisotropy of white matter, disability and blood iron parameters in multiple sclerosis (Herbet et al. 2018); social cognition

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and aggression in methamphetamine dependence with and without a history of psychosis (Uhlmann et al. 2018), and resting regional brain metabolism in social anxiety disorder and the effect of maclobemide therapy (Doruyter et al. 2018).

Genetic studies in this special issue include a cell line investigation of a dual mTORC1/mTORC2 blocker as a possible therapy for tauopathy (Salama et al. 2018); computational modelling to prioritise disease-causing mutations in *PRPS1* (Agrahari et al. 2018), and the influence of interactions between childhood trauma and hypothalamic adrenal axis variants on anxiety sensitivity in South African adolescents (Womersley et al. 2018).

The diversity of Neuroscientific investigations, when compared to previous Progress in Neuroscience in Africa special issues, reflects the evolution of research on our continent, showing that we, as Africans, are able to leverage our unique characteristics and are staged to be internationally competitive beyond our continent. We look forward to hosting future special issues to highlight African Neuroscience and chart its continued development.